

ANNUAL REPORT

OF THE

Medical Officer of Health

(JOHN C. THRESH, M.D., ETC.)

FOR THE

CHELMSFORD

Rural District Council

FOR THE YEAR 1907.

CHELMSFORD :

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ADDENDUM.

Soon after the completion of this report I found certain statistics which had been compiled when I first became Medical Officer to the Rural District Council. These refer to the 10 previous years, 1879-1888, and below I have compared them with the statistics for the last 10 years :—

Rates per annum per 1,000 population.			
		1879-1888.	1898-1907.
Death-rate from all causes		15·8	13·5
„ „ Typhoid Fever	...	0·15	0·055
„ „ Scarlet Fever	...	0·08	0·05
„ „ Diphtheria	...	0·26	0·24
„ „ the 7 principal infectious diseases	...	1·43	0·8

It does not follow that because the death-rates for Scarlet Fever and Diphtheria are lower that the diseases have been less prevalent. Scarlet Fever has been of a much milder type during recent years and the Antitoxin treatment of Diphtheria has greatly decreased the proportion of fatal cases.

Unfortunately the Infectious Diseases Notification Act did not come in force until Jan. 1st, 1890, so that the number of cases occurring prior to that period cannot be ascertained, but the numbers notified since are given in the following table :—

Average number of cases notified per annum.					
		Scarlet Fever.		Diphtheria.	
1890-1893, 4 years.	No isolation				
hospital	...	50	...	65	
1894-1897, 4 years.	Isolation				
hospital	...	60	...	93	
1898-1907, 10 years		72	...	61	

This Table does not indicate any marked decrease of Diphtheria, whilst the increase in Scarlet Fever appears to be continuous.

The mortality statistics show that on an average 15 fewer persons now die annually from infectious diseases, and 40 fewer from other diseases than was the case in the period 1879-1888. No statistics can show the amount of suffering prevented and the saving of money effected by this decreased mortality, but it must be very considerable indeed and amply repay for the time and attention given by the Council to all matters affecting the Public Health.

ERRATA.

Page 7, line 21, for "rain" read "ram."

Page 30, lines 2 and 3 from bottom, omit words "an additional storage tank has been provided and"

CHELMSFORD RURAL DISTRICT.

TO THE CHAIRMAN AND MEMBERS OF THE
RURAL DISTRICT COUNCIL.

GENTLEMEN,

I have pleasure in submitting to you the 19th Annual Report which I have prepared since becoming your Medical Officer of Health. The report is primarily intended for the information of the Local Government Board and the County Council, but it is also of service to you and to those whose public health interests are committed to your charge.

During the whole of the period it has been my privilege to be your Medical Officer of Health there has been a continuous improvement in the sanitary condition of the district. Some of these improvements have necessitated the expenditure of considerable amounts of public money, but in all cases the money has been judiciously expended, and, with one possible exception, the results have been all which could have been desired.

One of my earliest efforts was to prepare a complete report on the water supplies of the various parishes in the district, giving the results of the analyses of 220 samples of water. This was an arduous undertaking, but when completed and published it, at once, led to efforts being made to effect improvements.

One of the earliest of these was the provision of a water supply for the parish of Danbury. Out of this has grown the extensions, by which the Danbury works now supply the parishes of Little Baddow, East Hanningfield, Rettendon and Battles Bridge, Runwell, Woodham Ferris, and part of Sandon. This area, on the London clay, was supplied from a few deep wells, a few shallow wells, but chiefly from water impounded in ditches and ponds, and in dry summers it was often said that

it was easier to obtain beer than drinking water. New water mains ramify through all the parishes, and nearly all parts have an abundant and wholesome supply. The dairy industry could never have developed [as it has done had it not been for your foresight in providing a public water supply. The advantage to the inhabitants generally is fully acknowledged and scarcely a Council meeting elapses without an application for the further extension of the mains.] Your Council were one of the first to demonstrate that even thinly populated districts could be provided with water without imposing an [excessive burden upon the rates.

Another undertaking was the provision of a new water supply to Ingatestone, the existing public supply being derived from springs, which, on account of certain building operations, became liable to pollution, and not being in other respects satisfactory as a public supply. A deep well was sunk and the now completed works provide an abundance of water of the very highest organic purity, which will be adequate for the parish for many years to come.

The parish of Writtle was one in which I pointed out that the numerous shallow wells nearly all yielded a polluted water. Here a deep well has been sunk and a public supply provided, laid on to all parts of the village. Unfortunately the water was on occasions so turbid from the presence of very fine sand that a mechanical filter has had to be installed, but this has been entirely successful and now a bright pure water is supplied.

Great Baddow and Springfield having begun to develop, it became obvious that an additional source of water would soon be necessary. This was undertaken in time, a deep well sunk, and an excellent supply of water obtained, which, with the existing springs, will suffice for those parishes for many years.

In nearly every other parish the water supplies, both public and private, have been improved, and the details furnished to builders upon the proper construction of shallow wells is resulting in wells of a far better type being provided.

Sewerage works are not so important, in my opinion, as waterworks, but the provision of sewers and of sewage disposal work has not been neglected. Sewage purification tanks have been provided at Great Waltham which, though now somewhat antiquated, have effectually remedied the nuisances which previously existed. Writtle has been sewered and provided with an up-to-date disposal works, and the Ingatestone works are now greatly improved.

In 1891 I also published a report on the Housing of the Working Classes, which has since led to great improvements being effected. In two parishes, Good Easter and Ingatestone, you seriously contemplated exercising your powers under the Housing of the Working Classes Act, but when the landowners saw that you were in earnest they agreed to sell land or provide houses, and a fair number of good cottages were erected. In other parishes this action was not without its effect, as many new cottages have been erected and very many of the dilapidated properties which existed 19 years ago have disappeared.

On January 1st, 1894, an Isolation Hospital was opened. For some years I had pointed out the desirability of possessing such an institution, as cases of infectious disease occurred in overcrowded cottages, and at dairy farms, etc., which it was desirable should be removed for more effective isolation. I never suggested the removal of all cases, consequently a small hospital only was provided. It answered our purpose exceedingly well, but it was thought desirable to add an additional ward block so that two distinct diseases could be isolated at one time, and this led you, and myself, to think that probably a combination with the Borough of Chelmsford would be an economical arrangement. This combination was brought about but the result has by no means been economical. Unfortunately also the hospital has had no apparent effect in diminishing the prevalence of infectious disease, and to this extent it is a failure, but its utility in other respects is probably a sufficient justification for its continued existence. There is no doubt, however, that with our present knowledge the combination would not have been effected.

The sanitary administration has also been greatly improved during recent years. When I was first appointed one person acted as Inspector of Nuisances, District Surveyor, Road Surveyor, etc.; now we have three officials discharging the same duties, one of whom has an assistant. At that time your Council had no office, now each official has an office, and there is also a large committee room, all *en suite*, in the centre of Chelmsford. The selection of your officials has also been most judicious, as their sanitary duties are discharged in a most satisfactory manner.

Bye-laws have been adopted for Buildings, Nuisances, Offensive Trades, Slaughterhouses, etc. Regulations have been framed under the Dairies, Cowsheds, and Milkshops Order. Adoptive Acts have been adopted so far as are necessary for meeting the requirements of the district, and, above all, your Council take a real interest in the sanitary condition of the district.

One of the most important events during my tenure of office has been the recent application of the Borough Council to the Local Government Board and to Parliament for powers to extend the Borough by taking in all the populous areas belonging to the Rural District which abutted on the Borough. Fortunately the Borough were only partially successful, but practically the whole of Springfield was handed over, and in November last this passed from your control to that of the Borough Council. This matter will be more fully referred to in my report. The whole of the incidents are so recent that the briefer the references to them the better.

Enough has been said to shew that steady and uninterrupted progress has been made, but it must by no means be assumed that the condition of the district now is so good, or that the sanitary administration is so perfect, that they cannot be materially improved, for such is not yet the case.

The Council might, with advantage, support more strongly the Inspector of Nuisances in his endeavour to improve the

condition of the Dairies and Cowsheds, and in getting nuisances more promptly and effectually abated.

The provision of better water supplies to the parishes of Stock and Buttsbury, West and South Hanningfield, is also a subject requiring attention. The sewerage of Little Waltham and the adoption of some system of sewage treatment to prevent the pollution of the river, and to remedy the ditch nuisances which now occur, require very early attention. The development of Broomfield is also a matter for consideration, since many new houses have been erected of recent years, and many more will shortly be built. At present these drain into cesspools and are supplied with water from shallow wells. Some parts of the village are badly supplied, the quality and quantity being unsatisfactory. This subject has been discussed on more than one occasion, but as it was not pressing nothing has yet been done, though Mr. Dewhirst has not lost sight of it. I hope shortly that he will submit a scheme and that it will then receive serious attention. An improvement in the water supply of Great Waltham will also be a problem requiring attention in the near future. The increased demand taxes the resources of the rain in the summer, and some other method of raising the water is desirable. The Surveyor also informs me that the service tank at Danbury is much too small. It was originally only intended for the parish of Danbury, but as it now has to supply Little Baddow also, a tank of greater capacity is required.

Should this report reach others in the district, as I hope it may, who are not on the District Council, I may remind them that they can individually assist in improving the sanitary condition of the district by giving special attention to their immediate surroundings, seeing that their drains and water supply are in a satisfactory condition, and by giving notice to the Inspector or myself of the presence of any condition which may prejudicially affect health. Ministers and District Visitors have many opportunities of saying a word in season to those to whom they minister as to the necessity for cleanliness,

temperance, the proper feeding and upbringing of children, etc. What is wanted now is the education of the people, and especially of the young, on all matters pertaining to the maintenance of health and the prolongation of life. The new Education Act will, in its administration, serve a most useful, though indirect, educational influence. When children become aware that the State takes an interest in their health and well-being they themselves, in some measure, must be impressed by their importance, and the result will probably be that future generations will, from birth, have the prospect of a longer and healthier life, and that a smaller proportion will be born "tired" and gravitate towards our gaols and workhouses.

In conclusion, I have to express my indebtedness to the Surveyor (Mr. Dewhirst) and the Inspector (Mr. Edser) for supplying me with certain details for this report, and to record once more my appreciation of the services which they render to the Council and to the inhabitants of the Council's district. I desire also to thank the Clerk and the Deputy Clerk, and every member of the Council, for their invariable courtesy towards me and towards all their officers.

I have the honour to be, Gentlemen,

Your obedient Servant,

JOHN C. THRESH.

REPORT

OF THE

Medical Officer of Health

FOR THE YEAR 1907.

Sub-Registration District.		Area in Acres.	Population, Census, 1901.
1. Chelmsford ...	.. Three parishes	14,029	3,737
2. Ingatestone ...	... Eleven ,,	28,476	6,226
3. Great Waltham ...	... Ten ,,	25,690	6,415
4. Great Baddow ...	... Five ,,	15,408	7,339
Total ... 29 parishes		83,603	23,717

In the subjoined report all the information desired by the Local Government Board is given under the headings enumerated in their Memorandum on the preparation of Annual Reports.

1. Physical features and general character of the District.

The rural district includes 27 parishes clustered round the Borough of Chelmsford. In November the larger and more populous portion of the parish of Springfield, together with the Waterhouse Estate in the parish of Writtle, became included in the Borough. This alteration renders the shape of the borough a little more symmetrical, and is an advantage to the Waterhouse Estate, as the houses thereon can easily be supplied with water from the borough mains, and the sewers can readily be extended to the estate. The advantage to Springfield is

problematical, but for better or worse it is now absorbed in the borough.

The district is undulating in character and traversed by the River Chelmer and its tributaries. The valleys are wide and include a considerable area of marsh meadows. The hills are capped with drift gravel. To the north there is a considerable area covered with boulder clay and to the south a large area is on the London clay.

2. Chief occupation of the inhabitants, and the influence of particular occupations on public health.

Near Chelmsford there is a fair sprinkling of well-to-do people, who are engaged in business or in professions in London. With this exception all the inhabitants are more or less dependent upon Agriculture. Dairy farming is largely carried on in the district, the bulk of the cowkeepers being Scotchmen. There are no factories or mines and few or no persons are engaged in any kind of dangerous or unhealthy occupation.

3. The housing of the people.

Great attention has at various times been given to this subject, and speaking generally the number of houses is adequate and there are very few which are not reasonably fit for habitation. In one or two areas, especially East Hanningfield and Woodham Ferris village, a few more cottages could be provided with advantage, but elsewhere the local builders seem to be meeting all requirements. There is no overcrowding of houses on space, and with few exceptions the yards and gardens attached to the houses are ample for health. The conveniences provided in the older cottages are meagre. Some are without ovens, many without coppers, and still more without sinks. The privy accommodation has greatly improved of recent years, the privy middens now being few in number.

Pail closets are in very general use, and as a rule these are sufficiently far from the houses to prevent nuisances arising.

New houses must comply with the Council's Bye-laws. These are of recent date, and differ little from the "Model" save that under the exceptions houses may be built of other than hard and incombustible material under certain circumstances. A great agitation was raised some years ago about the "unnecessary" stringency of the bye-laws in preventing the erection of wooden or lath and plaster houses. Now that such houses can be erected few persons desire to take advantage of the facilities afforded. The whole agitation was in all probability brought about by persons who wanted an excuse for not erecting cottages on their estates. The Surveyor exercises very strict supervision over all houses in course of construction and every infringement is at once reported to the Sanitary Committee of the Council.

Four houses have been represented by me during the year as being unfit for human habitation. These were closed and others specially referred to in my report of last year have been greatly improved and made quite habitable and comfortable.

In every parish there are a few old cottages which require the constant attention of the Inspector, but I have noticed with pleasure that house agents are beginning to recognise that when Mr. Edser directs their attention to dilapidations or defects they will have no peace until repairs are executed or the defects remedied. Consequently to escape being wearied by his importunity they pay more prompt attention to his behests. Which is as it should be, and the inference is that they find that the Council's requirements are always reasonable.

The number of plans passed for new houses during the year is 109. The distribution, &c., is given in the subjoined Table kindly prepared for me by the Surveyor:—

PLANS FOR NEW BUILDINGS APPROVED IN 1907.

Parish.	New Buildings.	Additions.	Streets.	Workshops, Stables, Mission Rooms, &c.
Buttsbury	10	...	...	...
Sandon	3	1	...	2
Springfield	13	3	5	2
Little Baddow	1	1	...	...
Boreham... ..	1	3	...	1
Writtle ... ..	...	3	...	2
Great Baddow	11	7	...	...
Broomfield	37	...	...	...
Woodham Ferris	12	2	...	3
Stock	5	1	...	2
Ingatestone	4	3	...	2
Little Waltham	4	...	...	...
Margaretting	3	2	...	...
Daulby	1	3	...	2
Great Waltham	1	1	...	...
Rettendon	3	1	...	...
Runwell ... ..	...	1	...	...
Great Leighs ... ..	...	1	...	...
Total	109	33	5	16

4. Sewage and Drainage. Methods of sewage disposal, etc.

In every parish there are road drains which have been at some distant period converted into sewers. In most cases these sewers discharge into field ditches some distance from any road, footpath, or house, and the volume of house slops is not sufficiently large to cause any nuisance. In some instances, however, this fortunate condition does not exist and ditch nuisances occur. This is particularly the case at Little Waltham and a Committee met me there during the summer to discuss with the Surveyor what means could be adopted for obviating the nuisance. The houses are on both sides of a river of some little depth, and the fall is slight. Difficulties of this kind tax the capabilities of the most efficient Surveyor. Were money of little object the difficulties could easily be overcome, but the question of a reasonable cost has to be considered where the rateable value is low and the number of houses to be benefitted

is few. Something, however, must be done and I hope a feasible scheme will soon be devised and decided upon.

Nuisances arising from overflowing cesspools are not uncommon. Great difficulty is experienced in getting the tenants or owners to empty them sufficiently frequently, and the bye-laws relating to this matter might, with advantage, be more rigidly enforced. If people could be persuaded to dispose of the slops on the gardens instead of throwing them into cesspools, bumbies, or ditches, fewer nuisances would be created. Or if cesspools were made smaller and shallower probably the tenants would empty them more frequently. The comparison of two pairs of cottages recently visited is very instructive. A cesspool belonging to one pair was a constant source of nuisance, overflowing into a ditch at the roadside. Notices have to be served once or twice every year. When I visited with the Inspector I asked how it was that no nuisance ever arose from the cesspool belonging to the adjoining pair of cottages. When we examined this "cesspool" we found that it consisted merely of a hole in the ground about 2 feet cube, covered by a wooden board. The tenant said he bailed the contents out twice a week and spread it over his garden and he neither created a nuisance to himself nor his neighbours.

Springfield, Great Baddow, and Widford are sewered and the sewers connect with the Borough system, the whole of the sewage being dealt with at a farm in the parish of Springfield. This is managed by a Joint Sewerage Board. As a rule the effluent from the farm, which is discharged into the Chelmer Navigation, is up to the standard required by the County Council, but quite recently sewage was discharged, during a heavy rainfall, in sufficient quantity to destroy a large number of fish. The Joint Committee allege that the poisoning was due to some chemicals introduced into the sewers from some works connected with the system. If such is the case it is the duty of the Sanitary Authority concerned to prevent such deleterious matters entering the sewers, but it is obvious to anyone with a knowledge of sewage works that were proper

care taken at the works it would be practically impossible for the treated effluent to be so poisonous that a few hours' discharge would destroy all the fish in one reach of the river.

My investigations lead me to the conclusion that a heavy shower washed the contents of the open septic tank into the adjacent ditch and then into the river. The filth then absorbed the free oxygen from the river water so rapidly that the fish were killed by suffocation. The Joint Committee require the advice of a competent engineer.

The Ingatestone sewage farm has been taken over by the Council, and is, at last, in a satisfactory condition. It takes all the sewage from the village of Ingatestone. The sewage passes through an open septic tank and then used for irrigating the land. The field has an area of about eight acres, but only about six and a half acres can be utilised. As the population connected to the sewers is increasing more land is desirable.

Writtle village is also sewered and nearly all the houses are now connected. The sewage works are in a good condition and on rare occasions when an effluent has been obtainable it has been of good quality. Usually the land so completely absorbs it that it is never seen again. The Waterhouse Estate portion of this parish having become merged into the Borough of Chelmsford, no further reference to it is necessary.

The sewers generally are carefully supervised by the Surveyor and kept in good repair and are systematically flushed. On some of the systems there are automatic flushing tanks.

The Surveyor kindly informs me that the main sewer at Ingatestone has been extended 100 feet along the High Street and a manhole placed at the extremity. New 9in. sewers have been laid up Market Place and along the new road which is being constructed by Mr. C. H. Howell, the total length being 286 yards. The houses have been connected to the new sewer. At the Ingatestone sewage works detritus, storm and overflow chambers have been constructed, together with a sludge pit and storm water filter. A 6in. main carrier has been laid along the top of the field and it is now possible to use nearly all the

land under the management of the Engineer. The land also has been suitably prepared for dealing with the sewage.

An allegation was made that a certain portion of Sandon required sewerage. The houses in the locality are all of modern erection, stand far apart in their own grounds. Each drains into a proper cesspool, and one of these had been allowed to overflow and cause a nuisance, hence the complaint. The cesspool has since been removed and the overflow is now disposed of by irrigation over a meadow. I visited every house and came to the conclusion that the arrangements were so satisfactory that this authority could have no excuse for providing sewers. I did find, however, that one large house in the Great Baddow parish caused a nuisance by the daily emptying of a cesspool and the owner is anxious to do all that is possible to prevent it. The house is too low to be directly connected with the Great Baddow sewers, but probably it will be found possible to pump the cesspool contents into the sewer.

At Broomfield sewers will be required ere long and it is a question whether it is not desirable to provide a system now so that new houses can be connected as erected. If they provide cesspools then when the sewers are laid the whole drainage arrangements will require alteration, and this will have to be done at the expense of the parish. I strongly recommend immediate action as there are many nuisances now arising from the want of proper sewers. Little Waltham is the adjoining parish and if the sewage from both could be economically brought to one place for treatment this would be an advantage.

House drains generally in the district are in a satisfactory condition. Great care has been taken at Writtle to see that all the drains connected with the sewer were perfectly satisfactory. All were tested by the Inspector before they were covered in.

5. Pollution of Rivers and Streams.

The points where pollutions may occur are indicated in the previous paragraphs.

The pollution of the Wid at Ingatestone is now, I hope, a thing of the past, the farm being worked by the Sanitary Authority.

The same stream at Buttsbury becomes polluted by the sewage of Billericay, and a complaint was made during the year to the Billericay Rural District Council. The Clerk replied that the Council were engaged upon a sewerage scheme which would effectually abate the pollution complained of. I hope this will speedily be carried out.

There is no pollution of streams by manufactories of any kind.

6. Excrement Disposal.

Where there are public water supplies and sewers water closets are in general use. In Springfield (now merged in the Borough) there are many closets which have not the water laid on. A few occur also in Great Baddow and Widford. They are well looked after and they are kept in better condition than is usual under such circumstances.

The old privies and pail closets in Writtle are very rapidly being replaced by water closets. A large number of notices were served on owners during the year, and with few exceptions these have now been complied with. The pail contents were, until some months ago, removed by a scavenger, but this arrangement is no longer necessary.

In the more thinly populated parts and in the villages where there are no proper sewers, pail closets are almost exclusively used. In the Walthams and Broomfield these are emptied weekly by a scavenger. Wherever a privy is found in an insanitary condition a notice is served to convert it into a pail closet. Generally speaking, where one privy serves two houses an effort is made to get the owner to provide a second closet.

Bye-laws referring to the cleansing of privies, cesspools, etc., have been in force for many years (since 1894), but no

prosecution has ever been undertaken. An occasional prosecution, where owners or tenants neglect to empty cesspools, would be a great help to the Inspector.

7. Removal and Disposal of House Refuse.

Scavenging of house refuse is undertaken in Great Baddow. In Ingatestone and Writtle the inhabitants object on account of the expense. The need is not urgent, as the houses without gardens or facilities for disposing of the refuse are not numerous, but in each of these villages there are certain groups of houses without these facilities. If the scavenging of these is not undertaken the bye-laws referring to the weekly removal of house refuse might be more stringently enforced.

The one constant source of complaint is the dumping of the Borough refuse in Springfield or Great Baddow. Complaints are still being made and doubtless the Council of the enlarged Borough will forthwith proceed to erect the Dust Destructor which loomed so large in the recent enquiries, or failing this they might reasonably be requested now to keep the filth within the confines of the enlarged Borough.

Bumbies are common wherever the houses are scattered. A hole is dug in the garden and then filled up with house refuse, which is afterwards dug into the ground. When sufficiently far from the house and due care is exercised nuisances are avoided, but where the hole is near the back door and chamber utensils, etc., emptied into it, the Sanitary Inspector has to interfere.

8. Water Supplies.

The rainfall for the year was 21·4 inches, of which 8 inches fell in the last three months. This is about the average for Chelmsford. Since 1890 the average has been 21·7 inches. Most rain fell in 1903, when 34·4 inches were recorded, and the least fell in 1898, when only 16·65 inches were collected. The two driest consecutive years were 1904

and 1905, when 16·8 and 17·5 inches fell respectively. It is obvious that with such low rainfalls water cannot be very abundant, but by collecting water in localities where it is found in greater quantity than is needed by the inhabitants and carrying it to others where the supply was very limited most of the district is now adequately supplied.

The public supplies are as under :—

Great Baddow & Springfield ...	Source springs and deep wells.
Ingatestone & Fryerning ...	Deep well.
Writtle ...	Deep well.
Danbury and other parishes ...	Springs at Danbury.
Great Waltham ...	Spring raised by ram.
Little Waltham ...	Gravitation supply from spring.

GREAT BADDOW WORKS. The water supplied throughout the year has been of excellent quality. Recently the deep well water has occasionally contained some very fine sand, and if this continues some form of filtration will be necessary.

INGATESTONE. The deep well here yields a water of great purity, and the works since their completion have given every satisfaction.

WRITTLE WORKS. The turbidity of the water from the deep well, due to fine sand and clay, resulted in an arrangement being made to install a Bell's pressure filter, on the understanding that if after three months' trial it was not certified by me to be satisfactory, it should be removed without cost to the Authority. The filter was erected and submitted to such tests as I thought necessary. I found that when the water from the well did not contain much suspended matter that the filtration turned out a sufficiently bright water, but that on occasions when the untreated water was very turbid the use of a little aluminic sulphate was necessary to render the water perfectly bright. As the makers only guaranteed "brightness" when a little alumina was used, the filter did all

it was represented to be capable of doing, and upon giving my report to this effect the filter was taken over, and a shed is now being erected over it.

The bacterial efficiency of the filter was also tested, when it was discovered that the water from the air lift coming directly from the well contained an unusual number of bacteria, but none of a character indicating pollution. When using aluminic sulphate (about 1 grain per gallon) the results obtained were as follows :—

		Bacteria per cubic centimetre.		Appearance of the water.
Outlet from air lift	...	3,200	...	Quite turbid
Outlet from settling tank	...	40,000	...	Less turbid
As entering filter from filter well		50,000	...	„
Outlet from filter ...	...	3,500	...	Quite bright

(NOTE.—During this autumn I have found other Essex deep wells yielding water containing numerous bacteria. One of these is nearly 1,000 feet deep and like the Writtle well is so constructed that pollution of the water is impossible. The bacteria rapidly increase in the water when stored.)

THE DANBURY SYSTEM. This system, with its miles of mains ramifying through a thinly populated district, remains perfectly satisfactory, but the service reservoir on Danbury Hill is too small for present requirements. I have carefully examined the surroundings of the two springs, one on the common and the other on the Council's land, and find that the Surveyor has adopted all suitable precautions to prevent contamination. The water is of excellent quality. The demands for extensions of the mains are numerous and wherever possible at a reasonable cost the demands are acceded to.

The small public supplies at Great and Little Waltham are satisfactory, the springs being protected from dangerous pollution. At Great Waltham there is an increasing demand for water and the ram may in summer fail to raise enough to meet all demands. There is an abundance of water if some other means of raising it were adopted, and in the near future

this question of increasing the supply may have to be considered.

The various public pumps throughout the district are kept in order by a man who devotes all his time to waterworks repairs under the superintendence of the Engineer and Surveyor.

The water supplies to new houses receives especial attention, and the Authority's requirements as to the construction of new wells is now known to all the builders in the district. The Inspector, in collecting samples for analysis, always reports on the structure of the well, the surroundings, and possible sources of contamination.

Sixty-six samples of water have been examined in my laboratory. These include all the public supplies, the supply to every public elementary school, proposed supplies to new houses, etc. Many of these were examined bacteriologically as well as chemically. Besides these a number of sewage effluents and pond waters were submitted to analysis.

The Surveyor has kindly furnished me with the following interesting information with reference to water supplies and to improvements and extensions effected during the year:—

QUANTITY OF WATER SUPPLIED DURING THE YEAR.

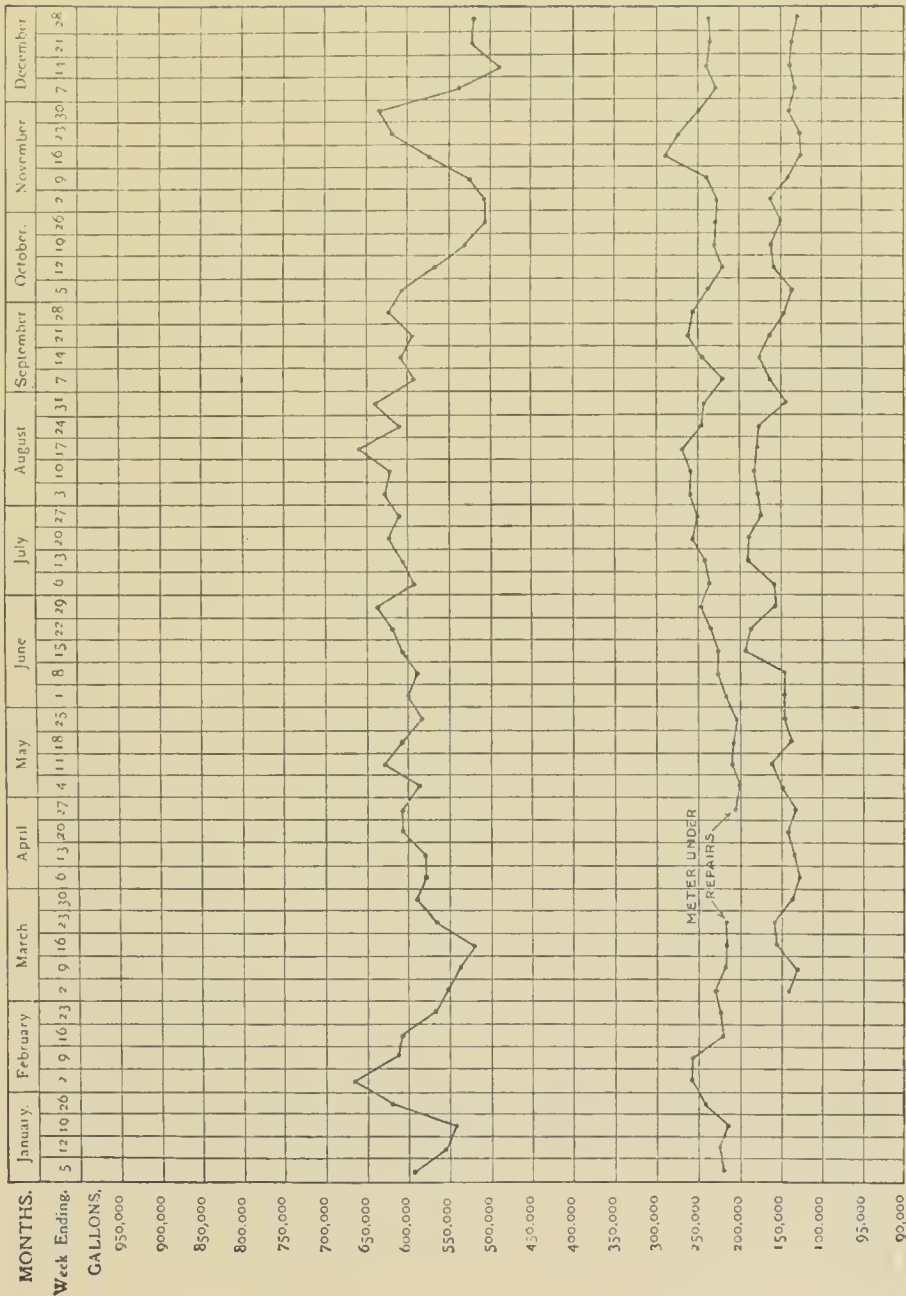
Great Baddow and Springfield Works	...	30,415,182	gallons
Danbury and other Parishes Works	...	12,436,465	„
Ingatestone Works, during 44 weeks	...	6,610,896	„

A new engine house, reservoir, etc., have been completed at Ingatestone. The old reservoir, wells, etc., have been abandoned and the fittings, etc., removed.

A new main, 90 yards in length, has been laid from the Woolpaek Inn to Fryerning Hall Farm, and another length from Fryerning Lane to the top of the Market place.

On the Danbury system an additional storage tank has been provided and about 390 yards of 3in. cast iron water main has been laid, extending the area of supply.

Chelmsford Rural District Council — Waterworks Consumption Chart. 1907.



James Dawbirst A.M.I.M.E.
Water Engineer.

An additional storage tank has been provided to the well at Streamers Lane, West Hanningfield, to afford an increased supply to West and South Hanningfield.

A mechanical filter has been installed at the Writtle Waterworks, and fire hose has been purchased to flush certain portions of the Writtle sewers.

The existing Water Regulations have been amended and extended.

9. Places over which the Council have supervision.

Lodging Houses. There is none in the district.

Slaughter Houses. These are frequently visited. There are a few old ones which one would like to see replaced by something more hygienic and modern. But care is taken not to infringe the bye-laws and not a single complaint has been made against them during the year.

Dairies and Cowsheds. These continue to receive a good deal of my attention, and progress is being slowly made. If the Authority exhibited a little more firmness progress would be more rapid. Several cowsheds have been almost reconstructed during the year, and the water supplies in other cases improved. Too many of the cowsheds are inadequately lighted. In fact, in winter, they are practically dark, all the air inlets being closed to keep the cows warm. In others the flooring and draining are defective, and there are still many with inadequate or impure water supplies.

The majority of the cows have their flanks covered with dry faecal matter and all too often such filth is found attached to the udders. When this is pointed out to the milkman his reply invariably is, "Oh! we always strain the milk before putting it into the churns!" Rarely it ever does one see any facilities provided for the washing of the udders or cleansing of the men's hands. Where anything is provided it is usually a damp and dirty towel. A really clean milking stool or a clean milkman is a great rarity. The reply of the men to the

question, "How do you clean your hands?" is usually replied to by a demonstration which consists of rubbing the palms vigorously on a coarse and dirty apron. At one place the stable cat was observed complacently drinking out of the bucket of milk and its paw, which had evidently been in the milk, had left its mark in dirt upon the surface.

Last year the Authority caused large cards to be printed and distributed directing attention to regulations concerning cleanliness. Most of these have now disappeared, and where they were hung up the men had evidently not read them.

It must not be supposed that because I so often refer to these matters in my reports to the Council that the cowsheds in this district are worse than elsewhere, because such is not the case. Taking them as a whole, the standard is much above the average, but I hope this will not cause the Council to cease their endeavours to reach a much higher standard. The difficulties are almost insurmountable and arise chiefly from the indifference and apathy of the labourers on the farms. There are many dairy farmers who would like to see things done in a more cleanly manner, but who fail to get their men to share their views. Even these do not do all that is possible, by providing ample facilities for securing cleanliness, and exercising supervision over the milking process. I often feel inclined to give away to despair and let things take their course, but so far I have not yielded to the temptation.

There are no proper milkshops, but a few small shopkeepers retail milk in small quantities. These are visited from time to time and seem to conduct their milk business in a satisfactory manner.

Bakehouses. All these are now in fair condition and are limewashed regularly. They are not always so clean as could be desired, and the bakehouse is too often made the temporary repository of lumber.

Factories and Workshops. A few flour mills are practically all the factories in the district. The workshops are visited at the periodical inspections, but the blacksmith's shop which

one of H.M. Inspector's is alleged to have ordered to be white-washed still retains its natural colour. There are many cottages where washing is done for families, but very few places where outside help is employed. There are no home-workers on the register.

Offensive Trades. There are two only, a leather dresser and a gut scraper. Neither causes any trouble or gives rise to any nuisance.

Schools. Early in the year a detailed inspection was made of every elementary school in the district. The results filled a volume of considerable size and this was lent to the Local Advisory Sub-Committee, and has not since been seen.

The defects found were indicated. These included want of proper lavatory accommodation, unsatisfactory water supplies, and improper modes of supplying water for drinking purposes. Nuisances arising from the "conveniences" being too near school windows, urinals draining into ditches, etc., were also detected.

When the report was presented to the Council, I am afraid its bulk alarmed them, as after a long discussion a Committee was appointed to consider it, and after meeting they recommended that the report be sent to the Local Advisory Sub-Committee. This was done and there the matter rests for the present.

With reference to the health of the scholars no action has been taken save when a child was suspected to be suffering from some complaint of an infectious character. Every school has a book of forms with counterfoil, and every suspected case of infectious illness is reported to me. My assistant then visits the case and reports to the Schoolmaster the result of his investigations. This work alone demands a great deal of time. No Medical Officer of Health in private practice could undertake it. Neither could I without assistance. The results are occasionally annoying, as when one has travelled ten miles to see a case and find that there never was any reason to suspect that the child was suffering from an infectious disorder, or

when a few acne pimples have been mistaken for chicken-pox. However, with experience, these futile journeys are becoming less numerous, as the Schoolmasters and Mistresses now make more careful enquiries before notifying.

10. Bye-laws and Regulations.

The Bye-laws adopted are as under:—

- 1.—Cleansing of footways, removal of house refuse, cleansing of cesspools, etc. Applicable to all the rural district, save Great Baddow (Springfield), Great and Little Waltham, Broomfield, and Writtle. Adopted 1894.
- 2.—New streets and buildings. Adopted 1903, the older bye-laws being repealed. Apply to whole district.
- 3.—Slaughterhouses. Adopted 1894. Apply to whole district, except a few of the smallest parishes.
- 4.—Offensive trades. Adopted 1894. Apply to Great Baddow special drainage district, Broomfield, Ingatestone & Fryerning, Great Waltham, Little Waltham, and Writtle.
- 5.—Regulations made under the Dairies & Cowsheds Order. Adopted in 1906 to replace older regulations.

These are all modern and at present need no amendment, neither are any further bye-laws required.

This year a little trouble has arisen in consequence of a few gipsies having encamped at Buttsbury, and it may be necessary shortly to consider the question of adopting bye-laws regulating tent and van dwellers.

The desirability of having bye-laws for pea pickers was discussed some time ago, but the people are here for so short a time and move so quickly from place to place that it was not considered necessary to obtain any special powers.

11. Nuisances.

The Inspector's tabulated summary shews the number of nuisances which came to his knowledge during the year and the number which has been abated. A great deal of his time during the year has been taken up with supervising the connection of the houses at Writtle with the sewers and water mains, so much so, in fact, that a temporary assistant had to be appointed. As this work is practically completed he will have more time at his disposal for systematic inspections. Most of the nuisances recorded were discovered during the house-to-house inspections made in the various parishes. When discovered, informal notices are served on the owners or occupiers, and another visit made to ascertain if the nuisance has been abated in a satisfactory manner. If not, it is reported to a Committee, which meets on the Friday afternoon preceding the Council meeting, and their suggestions are submitted to the Council for confirmation. If legal notices are served and not complied with the subject is again reported and further action decided upon. All sorts of expedients are adopted, and rightly, to avoid legal proceedings. The Clerk or Medical Officer of Health may be requested to write to or see the person in default to ascertain why the requirements of the Council are not complied with and to endeavour by moral suasion to get the necessary work carried out. When all these efforts have failed the Council either carry out the work or take legal proceedings, according to the section of the Public Health Act which has been infringed. Sometimes this roundabout process could be shortened with advantage and render the future work of the Inspector less arduous. The nuisances remaining unabated are not such as to require special comment.

12. Local Government Board Enquiries.

On March 19th a public enquiry was held at Ingatestone with reference to an application for a loan of £500 for improving the sewage works and extending the sewers, and also for

extending the water mains. A loan of £400 for the sewerage and sewage works was afterwards sanctioned.

In January Major C. E. Norton, R.E., held on behalf of the Local Government Board a public enquiry at the Shire Hall, Chelmsford, at the instigation of the Borough Council, into an application by that Council to alter and extend the Borough boundaries so as to include certain adjacent portions of the parishes of Widford, Writtle, Broomfield, Springfield, and Great Baddow.

Parishes affected.	Area.	Population.	Rateable Value.	Portion desired to be added to Borough.		
				Area.	Population.	Rateable Value.
Widford...	680	330	£4,960	109	263	£1,030
Writtle ...	8673	2750	£16,472	415	295	£3,753
Broomfield	2332	911	£4,646	75	33	£231
Springfield	2907	3707	£20,341	1732	3515	£17,224
Great Baddow	3911	2447	£11,353	1232	1831	£8,722
Totals	18503	10145	£57,772	3563	5937	£30,960

The enquiry lasted four days. The enquiry was singular in one important respect. The Borough could not and did not attempt to shew that the sanitary administration of the rural district was inefficient or could be improved. Dr. Reid, M.O.H. Staffordshire, who was called by the Rural Council, expressed the greatest satisfaction with the sanitary administration of the Council and with the sanitary condition of the coveted area.

The Local Government Board sanctioned a portion of the scheme only and the Provisional Order was opposed before the House of Commons Committee when the additions were further curtailed, and again before the House of Lords Committee, the final result being that the following portions of two of the parishes were ordered to be included in the Borough :—

	Area.	Population.	Rateable Value.
Springfield ...	668	3118	£15,273
Writtle ...	163	290	£3,150
	831	3408	£18,423

The Act came in force in November and since that date the above portions of the various parishes have passed from the control of the Rural District Council.

By arrangement with the Medical Officer of Health of the Borough I have included the mortality and sickness statistics for these portions for the whole year, as it would have been inconvenient to both of us to have had to alter our Tables so near the end of the year. The populations, statistics of deaths, etc., given in this report refer to the district as it existed before the Act came in force.

13. Infectious Diseases, methods of dealing with.

Information concerning non-notifiable diseases reaches me from various sources.

Many medical men courteously inform me when they are called in to cases of Measles, Chicken-pox, German Measles, etc. A few clergymen are equally courteous, but I am chiefly indebted to the kindness of school managers. Many interesting cases of illness thus come to my knowledge. When an outbreak threatens, circulars or handbills are widely distributed. A supply of these relating to (a) Diphtheria and Diphtheritic Sore Throats, (b) Scarlet Fever, (c) Measles, (d) Infectious Skin Diseases, are always on hand. The notifiable diseases are promptly notified, often by special messenger, telegram, or telephone, and it is not unusual to have a patient in the hospital within one or two hours of his having being seen by his medical attendant. After removal or recovery of the patient the house is disinfected. Bedding, etc., is removed and disinfected by steam. The room is sprayed with 2 per cent. formalin, a sulphur cake ignited and the room sealed up for 12 hours. Afterwards instructions are given to have the whole house and the offices thoroughly cleansed. Where children have to be excluded from school a form is sent to the School Correspondent. Schools are only closed when it becomes obvious that the mere exclusion of scholars will not arrest the

spread of infection. Careful enquiry is also made with reference to occupation so that advice may be given if necessary.

Whenever necessary patients suffering from Scarlet Fever or Diphtheria have been removed to the Isolation Hospital of the Joint Board, and there has always been the necessary accommodation.

Further experience only tends to confirm the views I have previously expressed that so far as stamping out an epidemic is concerned removal of patients to hospital has very little influence. Infection is not spread so much by the known and notified cases as by the unknown and therefore unnotified cases. Special search is always made for these, and where bacteriological examinations can aid in the diagnosis the services of my laboratory and assistant are always utilized to the utmost. This is especially the case when Diphtheria occurs or any apparently infectious disease associated with throat affections.

A good deal of time is occupied by enquiries arising out of school notifications. These have often resulted in the discovery of previously unrecognised cases of infectious disease, and in many other cases the parents at my request have called in a medical practitioner.

The Table on page 30 shews how the Infectious Diseases notified were distributed.

DIPHTHERIA. Only isolated cases have occurred save in Stock. A rapidly fatal case occurred in January followed by several others. The source of the original infection could not be found. Towards the end of the year more cases occurred in the same locality, when we found that one of children who had been attacked in January still had the diphtheria bacillus flourishing on her tonsils. She was put under treatment and kept under observation until the throat became free from this organism.

SCARLET FEVER. Most of the cases have occurred in Writtle. There was never any epidemic prevalence. Most

DISTRIBUTION OF INFECTIOUS DISEASES NOTIFIED DURING
THE YEAR.

	Diphtheria.	Scarlet Fever.	Typhoid and Allied Fevers.	Erysipelas.	Total.
<i>Ingatestone Sub-District—</i>					
Buttsbury and Stock ...	11	2	0	1	14
East Hanningfield ...	0	1	0	0	1
Ingatestone and Fryerning ...	3	2	0	1	6
Margaretting ...	3	1	0	0	4
Rettendon ...	0	0	0	1	1
West Hanningfield ...	0	0	0	0	0
Runwell, South Hanningfield and Woodham Ferris ...	3	2	0	2	7
<i>Chelmsford Sub-District—</i>					
Widford ...	0	2	1	0	
Writtle ...	1	32	0	2	
Roxwell ...	0	6	2	0	8
<i>Great Waltham Sub-District—</i>					
Boreham ...	0	2	0	1	3
Broomfield ...	3	7	1	0	1
Chignal ...	2	0	0	0	2
Good Easter ...	0	0	0	0	0
Great Leighs ...	0	5	0	0	5
Great and Little Waltham ...	1	5	0	3	9
Mashbury ...	0	0	0	0	0
<i>Great Baddow Sub-District—</i>					
Danbury ...	1	0	0	0	1
Great Baddow ...	1	1	0	5	7
Springfield ...	2	10	1	1	14
Sandon ...	0	0	0	0	0
Little Baddow ...	0	1	0	0	1
Total ...	31	79	5	17	132

cases occurred in April (9), and no cases were notified in May, June, August, and October. The way in which the infection spread was never discovered. There seemed to be no possible connection between most of the invaded houses. There was no centre of infection, cases cropping up in most distant portions of the parish and occasionally in the parishes immediately adjacent (Chignal, Broomfield, and Roxwell). When May and June passed without a notification and all the known cases had recovered, and the homes been disinfected, it was disconcerting in July to have two more cases notified, especially as one was

in a house to which a child had returned from the Isolation Hospital a few weeks before. The child had a discharge from the nose when sent home and had been supplied with a syringe for douching purposes.

The history of the continued infection in this family is interesting :—

F. A., aged 9 ... Notified January 28th, and removed to Hospital. Returned home on April 4th.

B. A., aged 16 ... Notified April 28th and removed to hospital. Returned home June 22nd.

E. A., aged 7 ... Notified July 13th. } Both removed to
C. A., aged 3 ... ,, ,, 14th. } Hospital.

How has the family been benefitted by the Hospital Isolation ?

TYPHOID FEVER. Only 5 cases occurred during the year. All were in different houses, and only two in the same parish, and between these there seemed no possible connection.

One patient was infected at the Chelmsford Infirmary during an outbreak there. Another had been working in an adjoining district and came home on account of feeling ill. This home consisted of a very small cottage with only two very small bedrooms. The other inmates of the cottage were lodged out, the two bedrooms made into one, and the patient placed in charge of two nurses.

Another patient belonged to a family particularly prone to contract Typhoid Fever, and it seems probable that the mother is a "carrier" of infection.

The source of infection in the two other cases could not even be plausibly conjectured.

CEREBRO-SPINAL MENINGITIS. Acting upon my advice the Authority made this disease notifiable for a year (until May next), but no case has been notified. I was invited to see two suspected cases, one of which certainly was not this disease.

The other, taken in connection with certain other facts, was at first suspicious.

A child aged 10 months died on January 27th. She had been ailing since the Christmas preceding and on the 27th had a convulsion and died. Death was certified as being due to Meningitis. Shortly after a sister, $4\frac{1}{2}$ years of age, was taken ill and died on Feb. 19th, death being certified as due to Influenza ; Enteritis. This child had no convulsions. A few weeks later a child aged 5, living in a house opposite, was taken ill suddenly with an attack of rigor and vomiting. On the 3rd and 4th day of illness he was delirious, and a suspicion of Meningitis occurred to the medical attendant and he wrote me about the case. When seen a marked change had taken place. The child had sweated profusely and at once seemed almost well. The physical signs were fairly characteristic of pneumonia, and we concluded that it was not Cerebro-spinal Meningitis.

ANTHRAX. Four notifications have reached me with reference to this disease in cattle. In no instance, so far as I can learn, did any person become infected. The farms are always visited.

MINOR INFECTIOUS DISORDERS. There has been no unusual prevalence of any of these diseases, but in January the Infants' Department of the Great Baddow Schools was closed for a fortnight on account of Chicken-pox. In July the School at Chignal and Great Waltham were closed for some weeks on account of the prevalence of Measles.

The deaths caused by the infectious diseases have been very few. Two were due to Measles, 1 to Scarlet Fever, 3 to Whooping Cough, and 3 to Diphtheria. Influenza caused 8 deaths, chiefly of elderly people, and at no time was there any unusual prevalence.

14. Birth and Death Statistics.

TABLE I. The population upon which all these statistics is based is for the whole district, 24,100. This is probably too low. Certainly from the number of houses which have been

erected and occupied since the census in 1901 one might be excused if the population were taken at 25,000, but I prefer to under estimate rather than over estimate. Where new houses have been erected, old houses have gone out of occupation, overcrowding has been reduced, young people getting married have not been compelled to live with their parents, etc. It is obviously impossible therefore to fix a definite number, and I have taken a low estimate, but an estimate which, taking everything into consideration, cannot, in my opinion, be far from the truth.

THE BIRTH-RATE. This shews no sign of increasing, but the downward tendency seems to be arrested. The rate for the year, 22·8, is very little below the average for the past ten years. During this period the fluctuation has been very small. The highest rate was recorded in 1903 (24·3 per 1,000 population), and the lowest (21·3) in 1900.

The births exceed the deaths each year by an average of about 220, and in 10 years, were there no migrations, the natural increase in the population would be 2,200, but there can be no doubt that the exodus of young adults from the rural to the urban districts is as large as ever, and the sharpest and brightest leave, the less energetic and decrepit remaining behind to perpetuate the race in the rural areas.

INFANTILE MORTALITY. Notwithstanding the above fact, the progeny of those who remain behind stand a much better chance of survival than the children born in towns. Out of every 1,000 born in this district 88, on an average, die before attaining the age of 1 year. The proportion during 1907 was 82, a little below the average. In towns it is usually over 100, and not unfrequently reaches 150, or even more.

TABLE V. shews the causes of death amongst infants. Deaths from the common infectious diseases and from diarrhœal diseases are very few here, only one during the past year, whereas in most towns they are the most frequent causes of death. On the other hand, I think, we have an excessive proportion of premature births. About 2 per cent. of the children

are born prematurely, and about the same proportion are so debilitated at birth that they fail to survive a year. These deaths are due to ante-natal influences. The condition of the mother before the birth of the child is at fault, and if we want to reduce the infantile mortality by the birth of more robust children, we must commence by paying attention to the mothers before the laying-in period. It is at this time that labours should be lightened and suitable food be supplied in abundance. In this district puerperal fever is very rare, so that whether the women are attended by friends, by a midwife, or a medical man, the risk of contracting this fever is very remote.

DEATH-RATE FROM ALL CAUSES. The deaths actually registered in the district were 285, or 10 below the average for the previous 10 years, and the death-rate from this uncorrected figure would only be 11·8 per 1,000 persons living. To get anything like a correct death-rate, however, various corrections must be made. Of these 285 registered deaths, 9 were of persons who did not belong to the district, who died in the Gaol, in the Billericay and Chelmsford Isolation Hospitals, and in a Sanatorium for Consumptives. These deaths, therefore, have to be deducted. On the other hand there are no less than 67 deaths to be added, since this number of persons who belonged to the district died in the Workhouse, the Chelmsford Infirmary, and in the London and other hospitals. These have to be added. We then get the approximate number of deaths to be 343, which gives a death-rate of 14·2 per 1,000, which is a little above the average for the previous 10 years.

The mortality has been excessive amongst the aged, and especially amongst the inmates of the Workhouse. I have never previously had to record nearly so many Union deaths. They have been about double the average.

In 1906 only 117 persons died over 65 years of age, whereas during the past year no less than 163 of those who died had attained this age.

DEATHS FROM INFECTIOUS DISEASES. The so called zymotic death-rate was only .4 per 1,000, the same as in the previous year. This is exceedingly low, and as these diseases are more under control and more affected by the sanitary conditions and the administration of the district than other diseases, the continuously low mortality rate therefrom is a matter for congratulation.

PHTHISIS AND CANCER. The Deaths from Phthisis were about the average, the deaths from Cancers above the average.

	Phthisis deaths.		Cancer deaths.	
1900	...	25	...	21
1901	...	19	...	26
1902	...	25	...	31
1903	...	24	...	22
1904	...	17	...	18
1905	...	22	...	27
1906	...	16	...	18
1907	..	20	...	28
		—		—
Average...		21	...	24
		—		—

The change during recent years is not very marked, but with Phthisis the tendency is to decrease, whereas with Cancer the tendency is to increase. About one out of every 15 deaths is due to Phthisis and one out of 13 to Cancer.

During the past year heart diseases have caused a larger number of deaths than Cancer, and all the infectious diseases put together (including Influenza) only caused 18 deaths, against the 28 from Cancer.

I have pleasure in expressing my appreciation of the efforts of Miss Marriage, of Broomfield, who for some years past has raised considerable sums as contributions to the Cancer Research Fund.

ERYSIPELAS. The death recorded from Erysipelas is worth recording, as it shews the infectious character of the disease.

A man died on May 5th from Cancer and two days prior to his death erysipelas of the face set in. He was visited by a

fellow lodger, aged 80, who contracted erysipelas and died after two days illness, the part affected being the face. Another lodger who helped to attend the old man contracted erysipelas, the nose being the part affected. He recovered. The rooms which had been occupied by the men were afterwards disinfected.

DEATH-RATES IN THE SUB-REGISTRATION AREAS AND GROUPS OF PARISHES :—

Sub-Registration Districts.

		1907.		1897-1906.
Great Waltham	...	16.1	..	14.4
Chelmsford	...	13.8	...	14.7
Great Baddow	...	11.9	...	13.7
Ingatestone	...	15.3	...	12.4

The recorded death-rates for a single year have little significance since in small populations the variations are considerable. The average for a series of years, however, are reliable and their indications are that the Ingatestone district is the most healthy and the Chelmsford district the least, the difference in the death-rates being 2.3 per 1,000. The two districts vary much in character, density of population, etc.

The variations in different years in the same small areas is well shewn in the following Table. Springfield has had an extraordinarily low death-rate the last two years. May this continue now that we reluctantly relinquish it.

Parishes.	Population.		Death Rate.		
	1907.		1906.		1907.
Boreham, Little Baddow, Danbury,					
Sandon	2580	...	16.0	...	16.7
Runwell, Rettendon, Woodham					
Ferris, and the Hanningfields	2820	...	8.9	...	16.0
Roxwell, Chignal, Good Easter,					
Pleshey, and Mashbury	1960	...	14.3	...	13.3
Writtle, with Highwood	2760	...	13.0	..	15.0
Great Waltham	2050	...	13.9	...	15.6

Parishes.	Population.		Death Rate.			
	1907.		1906.		1907.	
Broomfield, Little Leighs, Great Leighs and Little Waltham...	2340	..	10·3	...	16·6	
Springfield	3450	...	11·0	...	9·3	
Great Baddow, with Galleywood	2330	...	10·3	...	16·0	
Margaretting and Widford	880	..	7·0	...	8·0	
Stock and Buttsbury	1130	...	9·7	...	16·8	
Ingatestone and Fryerning	1750	...	9·9	...	15·4	

TABLE VI. This is included, since it enables the deaths from various diseases and the number of notifications in various years to be compared.

JOHN C. THRESH.

CHELMSFORD,

January 4th, 1908.

TABLE I.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1907 AND PREVIOUS YEARS.
CHELMSFORD RURAL DISTRICT.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED.				Deaths of Non-Residents in Public Institutions.	Deaths of Residents registered in Public Institutions beyond the District.	NETT DEATHS AT ALL AGES.		
		Number.	Rate.*	Under 1 year of Age		At all Ages.				Number.	Rate.*	
				Number.	Rate per 1,000 Births registered.	Number.	Rate.*					
1	2	3	4	5	6	7	8	9	10	11	12	13
1897	23,521	582	24.7	53	91	311	13.2	5	5	37	343	14.6
1898	23,630	523	22.1	69	132	336	14.2	6	4	37	369	15.6
1899	23,650	544	23.0	48	90	275	11.6	9	9	26	292	12.2
1900	23,700	505	21.3	58	115	383	16.1	12	2	13	394	16.6
1901	23,800	543	22.8	42	77	281	11.8	9	1	35	315	13.2
1902	23,850	549	23.0	36	65	283	11.9	10	7	34	310	13.0
1903	23,920	581	24.3	54	93	279	11.6	8	8	45	316	13.2
1904	23,920	534	22.3	46	86	282	11.8	2	2	34	314	13.1
1905	23,950	544	22.7	37	68	267	11.05	2	2	21	286	11.95
1906	24,050	559	23.25	33	59	249	10.35	13	10	39	278	11.6
Averages for years 1897-1906	23,796	546	22.95	47	88	295	12.4	8	5	32	322	13.5
1907	24,100	550	22.8	45	82	285	11.8	12	9	67	343	14.2

*Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths to be included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

Area of District in acres (exclusive of area covered by water), 83,603.

Total population at all ages, 23,717
 Number of Inhabited Houses, 5,498
 Average number of persons per house, 4.3 } At Census of 1901

I. Institutions within the District receiving sick and infirm persons from outside the District.	II. Institutions outside the District receiving sick and infirm persons from the District.	III. Other Institutions, the deaths in which have been distributed among the several localities in the District.
Chelmsford Joint Hospital. Billerica Isolation Hospital. Sanatorium, Sandon.	Workhouse. Chelmsford Infirmary. London Hospitals. Edinburgh Infirmary.	H.M. Prison, Springfield.

Is the Union Workhouse within the District? No.

TABLE II. VITAL STATISTICS OF SEPARATE LOCALITIES IN 1907 AND PREVIOUS YEARS.
CHELMSFORD RURAL DISTRICT.

NAMES OF LOCALITIES	GREAT WALTHAM.					CHELMSFORD.					GREAT BADDOW.					INGATESTONE.					WRITTLE.				
	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	
YEAR.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	
1897	5133	145	80	16	293	7	3	1	6760	157	93	16	6175	156	76	9	5100	137	71	9	5100	137	71	9	
1898	5133	120	86	13	293	7	3	0	6812	141	118	15	6175	136	96	11	5169	112	82	22	5169	112	82	22	
1899	5133	150	89	15	3666	93	55	8	6996	170	88	16	6175	143	80	19	...	...	...	...	...	...	...	...
*1900	6415	139	96	12	3706	92	73	9	7196	123	129	18	6290	131	60	9	...	...	...	...	...	...	...	...
1901	6415	147	78	10	3760	92	43	8	7385	169	103	14	6240	151	96	19	...	...	...	...	...	...	...	...
1902	6415	136	88	5	3770	102	55	10	7430	167	96	16	6240	135	91	10	...	...	...	...	...	...	...	...
1903	6420	165	79	14	3780	96	54	12	7450	161	106	14	6240	144	71	5	...	...	...	...	...	...	...	...
1904	6450	122	93	15	3780	100	54	11	7450	160	91	6	6240	152	78	14	...	...	...	...	...	...	...	...
1905	6450	153	92	11	3780	90	60	14	7480	164	74	6	6240	137	61	6	...	...	...	...	...	...	...	...
1906	6500	129	84	8	3790	108	48	5	7519	173	89	10	6259	149	57	10	...	...	...	...	...	...	...	...
Averages of Years 1897-1906	6046	141	87	12	3062	79	45	8	7248	159	99	13	6226	143	77	11	...	...	...	...	...	...	...	...
1907	6520	136	105	11	3790	95	52	11	7530	169	90	9	6260	150	96	14	...	...	...	...	...	...	...	...

* In 1899 a re-arrangement of the Sub-registration districts took place

TABLE III.
CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR, 1907.
CHEMSFORD RURAL DISTRICT COUNCIL.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.						TOTAL CASES NOTIFIED IN EACH LOCALITY.				No. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.				
	At all Ages	At Ages—Years.					1	2	3	4	Great Waltham.	Chelmsford.	Great Baddow.	Ingestone.	
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65									65 and upwards
Small-pox ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Mem- branous Croup)	31	2	19	4	6	...	...	...	20	...	...	...	...	...
Erysipelas ..	17	1	2	2	7	5	...	...	8	...	...	...	...	...
Scarlet Fever ..	79	2	49	5	8	...	...	...	5	...	...	...	...	...
Typhus Fever ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ..	5	1	1	...	3	...	...	...	...	...	...	...	...	...
Relapsing Fever ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals ..	132	3	18	71	11	24	5	30	46	23	33	11	21	7	11
Isolation Hospital Baddow Road, Great Baddow.															

Isolation Hospital ... Baddow Road, Great Baddow.

TABLE IV.

CHELMSFORD RURAL DISTRICT.—CAUSES OF, AND AGES AT, DEATH DURING YEAR 1907.

CAUSES OF DEATH.	DEATHS IN WHOLE DISTRICT AT SUBJOINED AGES.						DEATHS IN LOCALITIES (AT ALL AGES).				DEATHS IN PUBLIC INSTITUTIONS.	
	All ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	Great Waltham.	Chelmsford.	Great Baddow.		Ingatesstone.
Small-pox ..	2	..	2	..	..	..	..	2	..	..	..	..
Measles ..	1	..	1	..	..	..	..	..	..	..	..	..
Scarlet Fever ..	3	2	1	..	..	..	..	2	1	..	1	..
Whooping Cough ..	3	..	1	1	..	..	..	..	..	..	3	..
Diphtheria (including Membranous Croup) ..	..	..	..	..	..	..	..	..	..	..	..	..
Croup ..	..	..	..	..	..	..	..	..	..	..	..	..
Fever { Typhus ..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric ..	..	..	..	..	..	..	..	..	..	..	..	..
Other continued ..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic Influenza ..	8	..	1	..	..	3	4	3	2	..	3	..
Cholera ..	..	..	..	..	..	..	..	..	..	..	..	..
Plague ..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea ..	..	..	..	..	..	..	..	..	..	..	..	..
Enteritis ..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever ..	..	..	..	..	..	..	..	..	..	..	..	..
Erysipelas ..	1	..	..	..	..	..	1	..	..	..	1	..
Other Septic Diseases ..	4	..	1	..	..	2	1	..	2	1	1	..
Phthisis (Pulmonary Tuberculosis) ..	20	1	1	1	2	14	1	7	4	4	5	..
Other Tubercular Diseases ..	8	2	2	2	1	1	18	2	1	3	2	2
Cancer, Malignant Disease ..	28	..	..	..	..	10	10	10	3	11	4	..
Bronchitis ..	26	4	1	..	..	5	16	14	2	5	5	..
Pneumonia ..	17	2	..	2	..	10	3	4	6	3	4	..
Pleurisy ..	..	..	..	..	..	..	..	..	..	..	..	..
Other Diseases of Respiratory Organs ..	1	..	..	..	..	1	..	1	..	..	..	..
Alcoholism ..	1	..	..	..	..	1	..	1	..	..	..	..
Cirrhosis of Liver ..	..	..	..	..	..	..	..	..	..	..	..	..
Venereal Diseases ..	9	9	..	..	..	..	..	..	1	4	4	..
Premature Birth ..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases and Accidents of Parturition ..	..	..	..	..	..	..	..	..	..	..	..	..
Heart Diseases ..	42	3	..	..	..	12	27	13	6	15	8	..
Accidents ..	9	..	..	2	1	4	2	2	2	..	5	..
Suicides ..	1	..	..	..	..	1	..	..	..	..	1	..
All other causes ..	159	22	1	3	2	34	97	44	22	44	49	4
All causes ..	343	45	12	11	7	105	163	105	52	90	96	9

TABLE V.

CHELMSFORD RURAL DISTRICT.—INFANTILE MORTALITY DURING THE YEAR 1907.

Deaths from stated Causes in Weeks and Months under one Year of Age.

Cause of Death.		Under 1 Week	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All Causes.	Certified ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Uncertified ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Common Infectious Diseases.	Small-pox ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Chicken-pox ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Scarlet Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Diphtheria : Croup ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2
Diarrhoeal Diseases.	Whooping Cough ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Diarrhoea, all forms ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Enteritis (<i>not Tuberculous</i>) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wasting Diseases.	Gastritis, Gastro-intestinal Catarrh ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Premature Birth ..	10	..	..	..	10	1	..	1	..	..	..	1	..	..	..	..	11
	Congenital Defects ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	3
Tuberculous Diseases.	Injury at Birth ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Want of Breast-milk ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Atrophy, Debility, Marasmus ..	1	1	..	..	2	2	4	..	..	..	..	1	..	..	..	..	10
Other Causes.	Tuberculous Meningitis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
	Tuberculous Peritonitis : Tabes ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Mesenterica ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Other Tuberculous Diseases ..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
	Erysipelas ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Causes.	Syphilis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Rickets ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Meningitis (<i>not Tuberculous</i>) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
	Convulsions ..	2	..	..	..	2	..	..	..	..	1	1	..	1	2	..	..	6
	Pronehitis ..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	5
	Laryngitis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
	Pneumonia ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
	Suffocation, overlaying ..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Other Causes ..		..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	3
		15	2	..	1	18	4	2	5	..	3	2	5	1	2	2	1	45

District (or sub-division) of Chelmsford Rural District.

Births in the Year, 350.

Population (estimated to middle of 1907), 24,100
Deaths from all Causes at all Ages, 343.

TABLE VII.
FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES,
AND HOMEWORK.

1.--INSPECTION.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections	Written Notices.	Prosecutions
Factories ... (Including Factory Laundries) ...	21	—	Nil
Workshops ... (Including Workshop Laundries) } Workplaces	205	5	Nil
Total... ..	226	5	Nil

2. —DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
<i>Nuisances under the Public Health Acts -</i>				
Want of cleanliness	—	—	—	Nil
Want of ventilation	—	—	—	Nil
Overcrowding	—	—	—	Nil
Want of drainage of floors	—	—	—	Nil
Other nuisances	5	5	Nil	Nil
Sanitary accommodation { insufficient	—	—	—	Nil
{ unsuitable or defective	—	—	—	Nil
{ not separate for sexes	—	—	—	Nil
<i>Offences under the Factory and Workshop Act.</i>				
Illegal occupation of underground bake-house (s. 101)... ..	Nil	Nil	Nil	Nil
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	4	4	Nil	Nil
Other Offences (Excluding offences relating to out-work included in Part 3 of this Report)	Nil	Nil	Nil	Nil
Total... ..	9	9	Nil	Nil

TABLE VII.—*continued.*

FACTORIES, WORKSHOPS, LAUNDRIES, WORKSHOPS, ETC.

3.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year.	Number
Bakers Shops	40
Carpenters Shops	32
Blacksmiths Shops	37
Boot Repairing Shops	22
Tailoring Shops	2
Harness Making and Repairing Shops	7
Laundries	7
Dressmaking Shops	7
Cycle Repairing Shops	3
Wheelwrights Shops	29
Painters and Plumbers Shops	19
Total number of Workshops on Register ...	205

4.—OTHER MATTERS.

Class.	Number
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of Factory and Workshop Act (s. 133)	Nil
Action taken in matters referred by H.M. Inspector as remediable under Public Health Acts, but not under the Factory and Workshop Act (s. 5)	2
	2
Other	Nil
Underground Bakehouses (s. 101) :—	
Certificates granted during the year	Nil
In use at the end of the year	Nil

JOHN C. THRESH.

4th January, 1908.

TABLE VIII.

SUMMARY OF WORK done through the Sanitary Inspector
in the Rural Sanitary District of Chelmsford during the
year ending December 31st, 1907.

	Total Number for year.	Notes, Results of Inspection, &c.
1. Complaints received ...	13	
2. Nuisances detected without complaint	316	
3. Nuisances abated	290	39 notices outstanding chiefly at Writtle.
4. Notices served	329	
5. Summonses taken out ...	Nil	
6. Convictions	Nil	
7. Cottages inspected	877	
8. Lodging-houses inspected ...	Nil	
9. Slaughter-houses inspected...	8	
10. Bakehouses inspected ...	35	
11. Dairies and Milkshops inspected	7	Milkshops only.
12. Cowsheds inspected	98	Most have been visited twice.
13. Workshops inspected	88	Including bakehouses.
14. Filthy houses cleansed, sec. 46 Public Health Act, 1875	4	
15. Houses disinfected	68	
16. Overcrowding abated	4	
17. Houses placed in habitable repair	16	
18. Houses closed... ..	4	3 at Blue Cottages, Little Waltham, 1 at Pig & Whistle, Chignal.
19. Houses erected or re-built for which Water "Certifi- cates" were applied ...	58	
20. "Certificates" granted ...	39	1 Certificate may include more than 1 house.
21. „ deferred	Nil	
22. Wells sunk or improved supplies of Water afforded ...	...	Surveyor's department.
23. Wells cleansed or repaired ...	1	
24. Wells closed	Nil	
25. Houses connected with sewers	307	Houses are now connected to the new sewers at Writtle.
26. Houses connected with water mains ... ..	...	Surveyor's department.
27. Earth, pail, or improved Privies constructed or existing Privies altered ...	5	New pail closets.
28. Privies and W.C.'s repaired; W.C.'s supplied with water	5	Privies repaired, 3 W.C.'s repaired, 3 new W.C.'s provided.
29. Cisterns cleansed, repaired, or covered	Nil	
30. Animals improperly kept removed	1	
31. Samples of water taken for Analysis	13	For water certificates for new houses only.
32. Compensation paid for destruction of infected bedding	30/-	Challis, Noakes Farm Cottages, Great Leighs.
33. Seizures of unsound Meat, &c.	Nil	

WILLIAM EDSER,
Sanitary Inspector.

